AR0050

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION 9

In the Matter of :	AMENDED EPA ORDER NO. 90-22
United Heckathorn 402 Wright Avenue Richmond, California	
Respondents:	
Chemwest	
Levin Enterprises	
Levin Richmond Terminal Corporation	
Parr Richmond Terminal Corporation	
Montrose Chemical Corporation	
Shell Oil Company	
Rhone-Poulenc Basic Chemicals Company	
Proceeding under Section 106 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended by the Superfund Amendments and Reauthorization Act of 1986 (42 U.S.C. Section 9606)	

United Heckathorne
WAO2 10/23/90

I. Jurisdiction

This Order is issued to Chemwest, Levin Richmond Terminal Corporation, Levin Enterprises, Parr Richmond Terminal Corporation, Montrose Chemical Corporation, Shell Oil Company, and

Rhone-Poulenc Basic Chemical Company (formally, Stauffer Chemical Company) ("Respondents") pursuant to the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended by the Superfund Amendments and Reauthorization Act of 1986 (CERCLA), 42 U.S.C. 9601, et seq., by authority delegated to the Administrator of the United States Environmental Protection Agency (EPA), and redelegated to the EPA Regions.

The Director of the Hazardous Waste Management Division, EPA Region 9, has determined that there may be an imminent and substantial endangerment to the public health or welfare or the environment because of the release or threatened release of hazardous substances from the United Heckathorn Site, City of Richmond, Contra Costa County, California ("the Site" or "the facility").

The EPA has designated an On-Scene Coordinator ("OSC") for the Site, pursuant to 40 C.F.R. Part 300.120, published at 55 Fed.Reg. 8827-8828 (March 8, 1990).

II. Findings of Fact

BACKGROUND

A. Site Description

1. Physical Location:

The former United Heckathorn facility and operations area are located on the northern 4.5 acres of Levin Richmond Terminal Corporation property at 402 Wright Avenue, in Richmond, California. The Site is located along the Lauritzen and Santa Fe Chan-

nels in the Richmond Inner Harbor on San Francisco Bay. Adjacent properties are used for industrial purposes; residential areas are approximately one-quarter of a mile from the Site.

2. Site Ownership and Characteristics

The Site is currently owned by Levin Enterprises, which purchased the Site in 1981. The Site is operated by Levin Richmond Terminal Corporation. The prior site owners include Parr Industrial Corporation which owned the Site from the late 1940's until approximately 1961, and Parr Richmond Terminal Corporation which owned the Site from approximately 1961 until 1981. From approximately 1945 to 1966, the Site was used by several operators, including Heckathorn and Company, United Heckathorn Company, United Chemetrics and Chemwest (the "Heckathorn Companies") and the R. J. Prentiss Company, to process various chemicals including the pesticides DDT and dieldrin. From at least 1958 until at least 1965, Montrose Chemical Company ("Montrose") contracted with the Heckathorn Companies for the grinding of DDT, including Montrose-owned DDT. Shell Oil Company ("Shell") (then known as Shell Chemical Company) contracted with at least one of the Heckathorn Companies for the the grinding of dieldrin, including Shell-owned dieldrin. The Stauffer Chemical Company (now known as Rhone-Poulenc Basic Chemicals Company) contracted with at least one of the Heckathorn Companies and/or R.J. Prentiss for the grinding of DDT.

The Heckathorn Companies' buildings located on the Site were

demolished between 1966 and 1970. The Site is currently an active marine shipping terminal.

3. National Priority List Status (NPL) Status:

The Site has been listed by the California Department of Health Services (DOHS) as a State Superfund site, and by the U.S. Environmental Protection Agency (EPA) as a Federal Superfund site and is listed on the National Priorities List (55 FR 9688, March 14, 1990).

4. EPA Order

On September 28, 1990, EPA issued EPA Order No. 90-22 to Levin Richmond Terminal Corporation, Parr Richmond Terminal Corporation, Montrose Chemical Corporation and Shell Oil Company, This is an amended version of that Order.

B. Incident/Release Characteristics:

Soils and sediments throughout the Site are contaminated with DDT, dieldrin, and other pesticides. Contamination has spread throughout the Lauritzen Channel and into the Santa Fe Channel.

The area of highest detected contamination is in the intertidal zone along the eastern embankment of the Lauritzen Channel. In this area, which is partially beneath the Levin Richmond Terminal pier, there is a visible cream-colored chemical residue which has been found to contain up to approximately 100% DDT. Submerged sediments in this area have been found to contain 8.8%

DDT. This area also contains the highest levels of dieldrin contamination (45,400 parts per million) detected at the Site. DDT and dieldrin are found together in the soils and sediments in this area. Using DDT as an indicator, EPA has determined that a DDT concentration of 100 parts per million delineates the area of highest contamination of DDT and dieldrin from the rest of the Site. The highly contaminated sediments in this area come into direct contact with the waters of San Francisco Bay and pose an imminent and substantial threat to the marine food chain in the San Francisco Bay environment.

ENDANGERMENT: Threats to Public Health, Welfare & the Environment

There is an imminent and substantial threat to public health and welfare from direct contact with concentrated DDT at the Site. For example, in 1983, a worker at the Site reported various health problems including vomiting and vision changes after laying piles and clearing sediments at the Levin pier. The worker took a sample of white powder which he frequently came in contact with while working at the Site. The white powder was found by the California Department of Health Services to contain up to 77% DDT. The current Site condition poses the threat of further direct contact with the concentrated DDT.

There is also a threat to public health and welfare from the release of carcinogenic pesticides to the waters of San Francisco Bay and their subsequent bioaccumulation in aquatic organisms

consumed by humans. EPA has concluded that for the maximum protection of human health from the potential carcinogenic effects of exposure to DDT and dieldrin through the ingestion of contaminated organisms, the ambient water concentration should be zero (Ambient Water Quality Criteria for DDT, EPA 440/5-80-038, October, 1980). EPA has calculated that the ambient water concentration of DDT which may result in a one in one million incremental increase in lifetime cancer risk from the consumption of contaminated aquatic organisms is is 0.024 nanograms per liter. The level of dieldrin producing the same risk is 0.076 nanograms per liter. The mean bioconcentration factor for DDT in fresh and saltwater aquatic life is 17,870, and several fish species have been reported to have DDT bioconcentration factors over one million. A fish taken from the Lauritzen Canal was found to contain 13.6 parts per million DDT. This greatly exceeds the Food and Drug Administration Action Level of 5 parts per million. The State of California's 1985-86 Mussel Watch program (Water Quality Monitoring Report No. 87-2 WQ) found that the highest level of DDT bioaccumulation in the State occurred in the Lauritzen Canal. The 1985-86 Mussel Watch program also found the highest level of dieldrin bioaccumulation in mussels in the Lauritzen Canal. Mussels collected from the Lauritzen Canal by Aqua Terra for the Harding Lawson "Revised Draft Site Characterization and Remedial Action Plan" (November 6, 1986) contained 1.157 parts per million dieldrin, which exceeds the Food and Drug

Administration Action level of 0.3 parts per million.

This Site also poses an imminent and substantial endangerment to the environment. DDT and dieldrin are toxic to marine aquatic life. The chronic EPA Ambient Water Quality Criteria for protecting saltwater aquatic life from DDT is 0.001 micrograms per liter. Analytic data indicate that the water quality of the Lauritzen Canal has exceeded this value. The chronic EPA ambient Water Quality Criteria for protecting saltwater aquatic life from dieldrin is 0.0019 micrograms per liter. Analyses have also found sediments from the Lauritzen Canal to be acutely toxic to marine organisms. The National Oceanic and Atmospheric Administration (NOAA Technical Memorandum NOS OMA 52, March 1990) has published low and median aquatic life effects ranges of 1.0 to 7.0 parts per billion for DDT and 0.02 to 8.0 parts per billion for dieldrin in sediments. The concentrations of DDT and dieldrin found in Site sediments exposed to San Francisco Bay (Transect T-1, Levine-Fricke Remedial Investigation, May 17, 1990) are over 10,000,000 times higher than these low effects ranges. DDT and dieldrin are found together in the area of high contamination on the embankment.

As discussed above, the highest level of DDT bioaccumulation in the State was found in the Lauritzen Canal. Elevated levels of DDT bioaccumulation have also been found in waters adjacent to the Lauritzen Canal, indicating contaminant migration from the Site. DDT bioaccumulates in aquatic organisms and can harm

higher organisms, such as birds, which feed on them. For example, the listing of the California brown pelican as an endangered species was due to its near extinction from the effects of DDT bioaccumulation on its reproduction. San Francisco Bay and the waters around the Site are habitat for the brown pelican. DDT residues in aquatic organisms taken from the Lauritzen Canal and Santa Fe Channel have been found to be well above the 0.15 parts per million level which causes unacceptable thinning of pelican eggshells.

III. Conclusions of Law

A. The respondents are "persons" as defined in Section 101(21) of CERCLA, 42 U.S.C. Section 9601(21).

B. The property is located at 402 Wright Avenue, Richmond, California, and is a "facility" as defined in Section 101(9) of CERCLA, 42 U.S.C. Section 9601(9).

C. The pesticides DDT and dieldrin are "hazardous substances" as the term is defined in Section 101(14) of CERCLA, 42 U.S.C. Section 9601(14).

D. The presence of hazardous substances at the Site and the potential for those substances to migrate constitutes a "release" or "threatened release" of hazardous substances into the environment as defined in Section 101(22) of CERCLA, 42 U.S.C. Section 9601(22).

E. Respondents are "responsible parties" as defined in Section 107(a) of CERCLA, 42 U.S.C. Section 9607(a).

IV. Determinations

Based on the Findings of Fact and Conclusions of Law, the Director, Hazardous Waste Management Division, EPA Region 9, has made the following determinations:

A. The release or threatened release of hazardous substances and pollutants or contaminants from the Site may present an imminent and substantial endangerment to the public health, welfare, and the environment.

B. In order to prevent or mitigate immediate and significant risk of harm to human health and the environment, it is necessary that actions be taken immediately to contain and prevent the release and potential release of hazardous substances, pollutants or contaminants from the Site.

C. The removal measures required by this Amended Order are consistent with the National Contingency Plan, 40 Code of Federal Regulations, Part 300.

V. Order

Based upon the Findings of Fact, Conclusions of Law and Determinations, **EPA Hereby Orders** the Respondents to implement the following measures under the direction of EPA's On-Scene Coordinator.

A. Within forty-eight (48) hours of the receipt of this Amended Order, Respondents Chemwest, Levin Enterprises and Rhone-Poulenc Basic Chemical Company shall orally notify EPA of their intent to comply with all of the terms of this Amended Order. Within

forty-eight (48) hours of the receipt of this Amended Order, Respondents Levin Richmond Terminal Corporation, Parr Richmond Terminal Corporation, Montrose Chemical Corporation and Shell Oil Company shall orally notify EPA of their intent to comply with all of the terms of this Amended Order which were not present in the previous Order.

B. Respondents shall implement twenty-four (24) hour security at the Site which meets with EPA approval.

C. The Respondents shall restrict access to the Site to all personnel and shall not remove any contaminated materials from the Site without prior EPA approval.

D. The Respondents shall implement the Site Health and Safety Plan submitted to the California Department of Health Services on May 14, 1990 by Levine-Fricke consultants on behalf of Levin Richmond Terminal Corporation. This Plan shall conform to the requirements outlined in the Standard Operating Safety Guide, U.S. EPA, Office of Emergency and Remedial Response Support Division, Edison, New Jersey, November 1984, updated July 1988. All work shall conform with Occupational Safety Health Administration (OSHA) 29 CFR, Part 120.

E. Within forty-eight (48) hours of the effective date of this Amended Order, Respondents Chemwest, Levin Enterprises and Stauffer Chemical Company shall implement the "Work Plan for Removal of Contaminated Soils, United Heckathorn Site, Richmond, California" ("Work Plan", attached), dated May 14, 1990, submitted by

Levine-Fricke to the California Department of Health Services. Respondents Levin Richmond Terminal Corporation, Parr Richmond Terminal Corporation, Montrose Chemical Corporation and Shell Oil Company were previously ordered to implement the Work Plan and shall remain on the schedule established in the previous Order. The Work Plan is hereby amended to include the following:

1. Respondents shall remove all pesticide contaminated soils and sediments with a total DDT concentration equal to or above 100 parts per million from the upland, embankment and Lauritzen Canal areas that are contiguous with the visible cream-colored chemical residue on the Lauritzen Channel embankment crossed by Levine-Fricke's sampling transect T-1. Respondents Chemwest, Levin Enterprises and Stauffer Chemical Company shall, within forty-eight (48) hours of the effective date of this Amended Order, participate with the other Respondents to complete excavation if the other Respondents have already begun excavation. If the other Respondents have not begun excavation, Respondents Chemwest, Levin Enterprises and Stauffer Chemical Company shall commence excavation of contaminated soils within forty-eight (48) hours of the effective date of this Amended Order. Respondents Levin Richmond Terminal Corporation, Parr Richmond Terminal Corporation, Montrose Chemical Corporation and Shell Oil Corporation were ordered to commence excavation on October 22, 1990 and remain subject to the schedule contained in the previous Order.

2. Within forty-eight (48) hours of the effective date of this Amended Order, the respondents shall submit a detailed plan for preventing or minimizing the release of contaminated sediments to the Lauritzen Canal during excavation below mean high water. The plan shall address erosion and material spills during the excavation, and potential releases from the excavation site during the tidal cycle.

3. The respondents shall perform baseline water quality monitoring in the Lauritzen Canal and Santa Fe Channel prior to any excavation below mean high tide. The baseline water quality monitoring program shall consist of sampling at the following five locations:

i. Northern Lauritzen Canal near Levine-Fricke sampling point LC-1.

ii. Mid-Lauritzen Canal, 60 feet off the shoreward end of Levine-Fricke transect T-1.

iii. Mid-Lauritzen Canal, 120 feet off the shoreward end of Levine-Fricke transect T-1.

iv. Southern Lauritzen Canal, near Levine-Fricke sampling point LC-15.

v. Santa Fe Channel, near Levine-Fricke sampling point SFC-18.

Respondents shall take three samples at each location: surface, mid-depth, and bottom. Both total and soluble (filtered through a 0.45 micron filter) fractions of each sample shall be

analyzed for organochlorine pesticides and PCBs using EPA Method 608 (40 CFR Part 136, Appendix A). Unfiltered samples shall also be analyzed for total suspended solids. Respondents shall prepare a sampling and analysis and quality assurance plan shall be prepared for the water column monitoring.

4. Within forty-eight (48) hours of the effective date of this Amended Order, respondents shall provide a schedule for engineering design and removal of contaminated sediments subject to this Order which are below mean low water. Removal of such sediments shall begin within sixty (60) days of this Amended Order. The schedule shall provide for testing of contaminated sediments using the U.S. Army Corps of Engineers modified elutriate test to determine the probable DDT and dieldrin concentrations (total and soluble) produced by hydraulic dredging.

F. Within two (2) business days of receiving EPA comments regarding the work to be performed at the Site, the Respondents shall incorporate all agency comments into the Work Plan.

G. The Work Plan shall be considered incorporated into this Amended Order and enforceable under the terms of this Amended Order. The DDT and dieldrin contaminated soil shall be removed to an EPA approved hazardous waste storage, treatment, disposal, recycling and/or utilization facility and must be disposed of in accordance with the Resource Conservation and Recovery Act of 1976 (RCRA), 42 U.S.C. Section 9601, et seq., as amended, EPA's Revised Procedures for Implementing Off-Site Response Actions

("Off-site Policy" EPA OSWER Directive 9834.11, November 13, 1987), and all other applicable Federal, State, and local requirements. Post-removal soil sampling must be performed according to the terms of the Work Plan.

H. Respondents shall submit final report containing copies of all hazardous waste manifests and analytical data from the post-removal sampling to EPA, the California Department of Health Services, and the Regional Water Quality Control Board within fourteen (14) calendar days after completion of the Work Plan.

I. The Respondents shall provide EPA, the California Department of Health Services, and the Regional Water Quality Control Board with written weekly summary reports during the implementation of this Amended Order. The first report is due one week from the effective date of this Amended Order. These reports shall contain a summary of the previous week's activities and planned activities for the following two weeks.

J. Respondents shall inform EPA at least twenty-four (24) hours prior to any onsite work.

K. All sampling and analysis shall be performed consistent with the "Removal Program Quality Assurance/Quality Control Interim Guidance: Sampling, QA/QC Plan and Data Validation", EPA OSWER Directive 9360.4-01, dated February 2, 1989.

L. Each Respondent shall fully implement the plan as approved by EPA within the required time period, and shall fully cooperate with each other in carrying out any and all activities required

pursuant to this Amended Order.

VI. Compliance With Other Laws

Respondents shall comply with all federal, state and local laws and regulations in carrying out the terms of this Amended Order. All hazardous substances removed from the facility shall be handled in accordance with the Resource Conservation and Recovery Act of 1976, 42 U.S.C. Section 6921, et seq., the regulations promulgated under that Act, and Section 121(d)(3) of CERCLA, 42 U.S.C. Section 9621(d)(3).

VII. On-Scene Coordinator

EPA has appointed an On-Scene Coordinator (OSC) for the Site who has the authority vested in the On-Scene Coordinator by 40 C.F.R. Part 300, et seq. The On-Scene Coordinator for the Site for the purposes of this Order is:

Richard Wm. Martyn
Federal On-Scene Coordinator
United States Environmental Protection Agency, Region 9
Mail Code H-8-3
75 Hawthorne Street
San Francisco, California 94105

(415) 744-2288

VIII. Submittals

All submittals and notifications to EPA required by this Amended Order or any approved proposal under this Amended Order concerning the United Heckathorn Site, Order number 90-22, shall be made to:

Jerry Clifford
Deputy Director, Superfund
Hazardous Waste Management Division
United States Environmental Protection Agency, Region 9
Mail Code H-1-S
75 Hawthorne Street
San Francisco, California 94105

Copies of all submittals and notifications shall be sent to the On-Scene Coordinator.

All approvals and decisions made by EPA regarding the submittals and modifications shall be communicated to Respondents by the Deputy Director, Superfund or his designee. No informal advice, guidance, suggestions, or comments by EPA regarding reports, plans, specifications, schedules, or any other matter will relieve Respondents of their obligation to obtain formal approvals as required by this Amended Order.

IX. Access

Respondents shall provide EPA employees and other representatives with complete access to the facility at all times. Nothing in this Amended Order limits any access rights that EPA or other agencies may have pursuant to law.

X. Endangerment During Implementation

The OSC may determine that acts or circumstances (whether related to or unrelated to this Amended Order) may endanger human health, welfare or the environment and may order the Respondents to stop further implementation of this Amended Order until the endangerment is abated.

XI. Government Not Liable

The United States Government and its employees and other representatives shall not be liable for any injuries or damages to persons or property resulting from the acts or omissions of Respondents, their employees or other representatives caused by carrying out this Amended Order. For the purposes of this Amended Order, the United States Government is not a party to any contract with the Respondents.

XII. Noncompliance

A. A willful violation or failure or refusal to comply with this Amended Order may subject Respondents to a civil penalty of up to $25,000 per day in which the violation occurs or failure to comply continues, pursuant to the provisions of Section 106(b)(1) of CERCLA, 42 U.S.C. Section 9606(b)(1). Failure to comply with this Amended Order without sufficient cause may also subject Respondents to punitive damages of up to three times the total costs incurred by the United States for Site response, pursuant to Section 107(c)(3) of CERCLA, 42 U.S.C. Section 9607(c)(3).

B. EPA may take over the response action at any time if EPA determines that Respondents are not taking appropriate action. EPA may order additional actions it deems necessary to protect public health, welfare, or the environment.

XIII. Opportunity to Confer

Respondents may request a conference with the Deputy Director, Superfund, EPA Region 9, or his staff to discuss the provisions of this Order. At any conference held pursuant to Respondents' request, Respondents may appear in person or by counsel or other representatives for the purpose of presenting any objections, defenses or contentions which Respondents may have regarding this Amended Order. If Respondents desire such a conference, Respondents must make a request orally to Richard Martyn, Federal On-Scene Coordinator, at (415) 744-2288 within 48 hours of receipt of this Amended Order, and confirm the request in writing immediately. A conference does not alter the effective date of the Amended Order.

XIV. Parties Bound

This Amended Order shall apply to and is binding upon the Respondents, their officers, directors, agents, employees, contractors, successors, and assigns.

XV. Notice of Intent to Comply

Within forty-eight (48) hours of receipt of this Amended Order, Respondents Levin Enterprises, Chemwest and Rhone-Poulenc shall orally inform the On-scene Coordinator of their intent to comply with the terms of this Amended Order. Within forty-eight (48) hours of receipt of this Amended Order, Respondents Levin Richmond Terminal Corporation, Parr Richmond Terminal Corporation, Montrose Chemical Corporation and Shell Oil Company shall

orally inform the On-scene Coordinator of their intent to comply with the terms of this Amended Order that are different from the terms of the original Order. The oral notice shall be confirmed within two (2) days by written notice to the Director. Failure to punctually notify EPA of the Respondents' intent to fully comply will be construed by EPA as a refusal to comply.

XVI. Notice to State

Notice of the issuance of this Amended Order has been given to the Department of Health Services, State of California, and the Regional Water Quality Control Board. EPA will consult with the California Department of Health Services and the Regional Water Quality Control Board, as appropriate.

XVII. Record Retention

Copies of all records and files relating to hazardous substances found on the Site shall be retained for six years following completion of the activities required by this Amended Order and shall be made available to the EPA prior to the termination of the removal activities under this Amended Order.

XVIII. Additional Work

Nothing contained herein shall be construed to prevent EPA from seeking legal or equitable relief to enforce the terms of this Amended Order, or from taking legal or equitable action as it deems appropriate and necessary, or from requiring the Respondents in the future to perform additional activities pursuant to

CERCLA, 42 U.S.C. Section 9601, et seq., or any other applicable law.

XIX. Effective Date

Notwithstanding any conferences requested pursuant to the provisions of this Amended Order, this Amended Order is effective upon receipt. The effective date of this Amended Order does not alter the schedule contained in the Order as to Respondents Levin Richmond Terminal Corporation, Parr Richmond Terminal Corporation, Montrose Chemical Corporation and Shell Oil Company.

IT IS SO ORDERED on this 23 day of October, 1990.
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

by: _____
Jeff Zelikson
Director, Hazardous Waste Management Division EPA Region 9

Contacts:

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Work Plan for Removal of Contaminated Soils
United Heckathorn Site
Richmond, California

May 14, 1990
1530

Prepared for:
California Department of Health Services
700 Heinz Street, 2nd floor
Berkeley, California 94710

Submitted on Behalf of:
Levin Richmond Terminal Corp.
402 Wright Avenue
Richmond, California 94804

LEVINE·FRICKE

LEVINE·FRICKE
CONSULTING ENGINEERS AND HYDROGEOLOGISTS

May 14, 1990 LF 1530

Mr. Ted Park
California Department of Health Services
Toxic Substances Control Division
2151 Berkeley Way, Annex 7
Berkeley, California 94704

Subject: Soil Removal Work Plan for United Heckathorn Site

Dear Ted:

Enclosed is the work plan the removal of soils from the United Heckathorn Site, which Levine·Fricke has prepared on behalf of the Levin-Richmond Terminal Corporation (LRTC), in accordance with your letter to LRTC dated April 3, 1990.

In our telephone conversation of May 10, 1990, you indicated that it would be acceptable for LRTC to provide DHS with this document by May 14, 1990.

Please call either of us if you have any questions on this letter.

Sincerely,

Mark D. Knox, P.E.
Principal Engineer

Alan L. Leavitt
Senior Engineer

CC: Keith Howard, Cooper, White & Cooper
Mike McCoy, Levin Richmond Terminal Corporation
William Benak, Levin Enterprises
Steve Peck, Hanson, Bridgett, Marcus, Vlahos & Rudy
Roger Pool, Farella, Braun & Martel

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Other offices in NEWPORT BEACH and OAKLAND, CA

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LIST OF FIGURES

WORK PLAN FOR REMOVAL OF CONTAMINATED SOILS

UNITED HECKATHORN SITE

RICHMOND, CALIFORNIA
LF 1530

1. INTRODUCTION

1.1 Background Information

Levine·Fricke has prepared this work plan on behalf of Levin Richmond Terminal Corporation (LRTC), the current occupant of the United Heckathorn Site (the Site). Soils and sediments at the Site are contaminated with DDT, aldrin, dieldrin, BHC, and other pesticides as a result of the chemical handling, processing, and disposal activities of previous Site occupants and chemical suppliers. The Site is an active marine shipping terminal located along the waterfront in Richmond, California. This work plan describes the proposed activities and schedule for excavating and removing soils and embankment sediments with the highest DDT concentrations from a localized area of the Site adjacent to the Lauritzen Canal.

The United Heckathorn Site is both a State and Federal Superfund site. DOHS is managing the remedial investigation/feasibility study (RI/FS) and cleanup of this site as the lead government agency. Levine·Fricke is completing the RI/FS for the Site, in accordance with the National Oil and Hazardous Substance Contingency Plan, 40 C.F.R. Part 300 (1990), and the Superfund Amendments and Reauthorization Act of 1986 (SARA) 42 U.S.C. Sections 9601 et seq.

Levine·Fricke provided DOHS and other involved government agencies with a Field Data Report (February 15, 1990), which summarized the site characterization activities completed between October 1989 and January 1990. The soil and sediment sampling results included in that report indicated percent level concentrations of chlorinated pesticides over a localized portion of the Site near the former United Heckathorn facility and adjacent to the Lauritzen Canal. In its letter to LRTC dated April 3, 1990, DOHS required LRTC to prepare this work plan for the removal of the most highly affected soils from this part of the Site.

1.2 Site Description

The former United Heckathorn facility and operations area are located on the northern 4.5 acres of Levin Enterprises' property at 402 Wright Avenue, in Richmond, California (see Figure 1). Parr-Richmond Terminal Company, Parr-Terminal Company, and/or Parr Industrial Corporation owned and/or leased the Site from the mid- to late 1940s until 1981. From approximately 1947 to 1966, the Site was used by several operators, including Universal Pigment and Chemical Company, R.J. Prentice Company, Heckathorn and Company, United Heckathorn, United Chemetrics, and Chemwest Incorporated, to manufacture and package various chemical products. For purposes of this work plan, these companies are collectively referred to as the "United Heckathorn Company" or "United Heckathorn facility." DDT, aldrin, dieldrin, BHC, and other pesticides were the primary chemicals processed at the United Heckathorn facility. These processing activities included pesticide mixing, blending, grinding, and packaging.

For the purposes of the RI/FS, the Site and surrounding locations of potential concern have been divided into the following groups, as shown in Figure 2:

1. Upland Area: This part of Levin Enterprises' property begins above the intertidal zone and is relatively level, with elevations ranging from approximately 7 to 11 feet above mean sea level (MSL). The northern part of this area includes the former operations area of the United Heckathorn Company and other former industrial tenants. As an interim remedial measure, LRTC has covered this part of the Site with approximately 1.5 feet of gravel.

2. Eastern Embankment of the Lauritzen Canal: This part of Levin Enterprises' property includes the intertidal zone along the eastern shoreline of the Lauritzen Canal. The eastern embankment area consists primarily of rubble and sandy gravel fill overlying Bay Mud. It has a slope of approximately 1:1 or steeper. Most of the embankment is covered by a pile-supported wharf used to load and unload cargo vessels. Steel and timber retaining walls have been installed along much of the landward side of the wharf as an interim measure to reduce erosion of the embankment and upland area.

3. Lauritzen Canal: The Lauritzen Canal is approximately 1,800 feet long and ranges in depth from approximately 20 to 40 feet deep. The northern end of the Lauritzen Canal is about 150 feet south of Cutting Boulevard, and the south end of this waterway is bordered by the Santa Fe Channel.

2.0 DESCRIPTION OF SOILS TO BE REMOVED

2.1 Chemical Analysis Results

During RI field work conducted at the Site between November through December 1989, the highest chlorinated pesticide concentrations (e.g., greater than 1 percent DDT) were detected in upland soils and embankment sediments in the vicinity of the electrical substation adjacent to the former United Heckathorn facility. A chemical residue with chlorinated pesticide concentrations as high as 27 percent was also observed along the embankment in the intertidal zone downslope from this area. Following its review of the Field Data Report for the Site, DOHS requested LRTC to remove these very highly contaminated residues, embankment sediments, and upland soils. In accordance with DOHS' letter of April 3, 1990, the specific locations where soil removal is planned are near sampling stations E-4, T-1, and LF-14. The RI sampling results for this part of the Site are shown in Figure 3, and summarized below.

2.1.1 Upland Area

The highest chlorinated pesticide concentrations detected in the upland area were found in soil samples collected from boring LF-14. At this location, the sample collected from a depth of 6 feet below the ground surface (near the fill/Bay Mud interface) had a total concentration of DDT, DDD, and DDE (collectively referred to as tDDT) of 39,523 ppm, and contained aldrin, dieldrin, and BHC concentrations, ranging from a few ppm up to several hundred ppm. The soil sample collected from a depth of approximately 4 feet below the surface had a tDDT of 15,466 ppm. The deepest sample, collected from Bay Mud sediments at a depth of 11 feet below the surface, had a tDDT concentration of only 2.79 ppm, bounding the vertical extent of significantly elevated contamination at this location.

The high pesticide concentrations detected in samples from boring LF-14 appear to represent a localized "hot spot" area, based on the much lower tDDT concentrations detected at other nearby sampling points. As shown in Figure 3, the tDDT concentrations detected in upland soil samples from the nearest boring locations (LF-17, LF-13, and LF-24) were three to five orders of magnitude less than the highest tDDT concentrations detected in soil samples from LF-14. While these additional sampling points laterally bound the upland area of highest tDDT contamination, additional sampling is planned to refine the areal extent and volume of upland soils targeted for excavation and removal from the Site (see Section 2.2 below).

2.1.2 Embankment Area

The highest chlorinated pesticide concentrations detected at the Site have been reported for sediments and chemical residues located along the shoreline of the Lauritzen Canal, downslope from the electrical substation and boring LF-14. At this part of the Site, samples from several locations (E-4, T-1, and "Cream") had tDDT concentrations ranging from a few percent up to 31 percent, and contained aldrin, dieldrin, and BHC at concentrations ranging from a few ppm up to several hundred ppm. These samples ranged in depth from the embankment surface to a depth of 12 to 18 inches below grade. Samples were not collected below a depth of approximately 18 inches. While most of the chemical residues appear to be located at elevations above the zone of tidal action, the RI sampling results indicate that significantly-affected embankment sediments extend downslope approximately 1 to 2 feet below mean sea level.

As previously noted, the highest tDDT concentrations detected at the Site were found in the cream-colored residue along the embankment. Therefore, a more detailed visual survey of the embankment was performed to estimate the areal extent of this substance. This survey was conducted on April 26, 1990, between 9:00 and 11:00 a.m. (approximate tidal stage of 0 to 2 feet below mean sea level). Based on these field observations, this chemical residue extends along the embankment from the centerline of the electrical substation to approximately 50 feet north of the substation (see Figure 3).

Due to increasing amounts of riprap along the shoreline, it was not possible to observe the embankment sediments further than 50 feet north of the substation. Therefore, the length of shoreline which is affected by chemical residues may be greater than distance which has been estimated by visual observations. However, chemical residues were not observed at embankment sampling station E-3, located approximately 130 feet north of the electrical substation (see Figure 3). Samples from embankment stations E-3 and E-5 bound the lateral extent of the most highly affected shoreline contamination. However, as with the upland area, additional sampling is planned to refine the areal extent and volume of affected sediments targeted for excavation and removal. This proposed sampling activity is described below.

2.2 Pre-Excavation Sampling Plan

Additional sampling is planned to define further the horizontal and vertical extent of significantly elevated chlorinated pesticide concentrations in the upland soils and embankment sediments near the electrical substation. This proposed field

work will include sampling at four embankment locations (E-15 through E-18) and five upland locations (LF-28 through LF-32), as shown in Figure 3.

While drilling each upland soil boring, samples from shallow depths (approximately 3 feet below grade), intermediate depths (approximately 6 feet below grade), and deep depths (approximately 9 feet below grade) will be collected for chemical analyses. Three soil samples will be collected from each of the embankment sampling locations. These samples will be collected from approximately 0 to 4 inches (shallow), 12 to 18 inches (intermediate), and 26 to 32 inches below the surface. The embankment samples collected from each interval may be combined from several pits within several feet of one another to obtain composite samples for each depth interval, to improve the representativeness of these data.

A total of 27 samples will be collected and analyzed for chlorinated pesticides using EPA Method 8080. The sampling and quality control procedures for this field work will be performed in accordance with the procedures specified in Levine·Fricke's Quality Assurance Project Plan for the United Heckathorn Site, dated October 9, 1989. Sampling field work will be carried out in accordance with the site safety procedures described in Levine·Fricke's Health and Safety Plan (HSP) for the United Heckathorn Site (dated November 6, 1989).

Sample analysis results for the above field work will be provided to DOHS in a letter report which includes a revised estimate of the areas and depths which are targeted for cleanup at the Site.

3. EXCAVATION AND REMOVAL PROCEDURES

3.1 Site Access Preparations

There are significant access restrictions which hinder sampling and the subsequent excavation of soils in the areas targeted for the proposed removal action. As previously noted, upland boring LF-14 is next to an electrical substation which is currently used to power electric cranes operated by LRTC. The areas targeted for sampling and possible soil removal are in close proximity to this substation and its associated underground electrical lines. LRTC plans to relocate this substation to a different part of the Site. However, it will be necessary to coordinate sampling and future cleanup activities with the removal of the transformers, portions of the concrete pad, and associated structures, as noted in the project schedule (see Section 6 below).

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Access to the embankment area is also very limited because of the presence of pile-supported rail lines and a massive pile-supported wharf at this part of the Site. LRTC actively uses these structures to operate its bulk terminal facility. It will be necessary to dismantle these structures over the length of shoreline where soil excavation is required. This demolition work will need to be coordinated with LRTC's facility operations to minimize the disruption of normal work activities at the Site. Additionally, the affected shoreline area contains concrete rubble, riprap, and wooden pilings which will need to be cleared from the Site prior to excavation of embankment sediments. The estimated schedule for this preparatory work is discussed further in Section 6.

3.2 Soil Containment Procedures

Conventional earth-moving equipment (e.g., backhoes, clam-shell buckets, and front-end loaders) will be used to excavate shallow soils and embankment sediments. Water will be used to wet down the upland excavation area, as necessary, to control dust emissions. Little or no dust generation is expected in the embankment area, since these sediments are typically saturated due to their proximity to the Lauritzen Canal.

The removal of embankment sediments will be scheduled during times of low tide, so that underwater excavation should not be necessary. The shoreline excavation will be closely monitored to ensure that stable slope configurations are maintained, and to minimize the potential for slough or other excavation debris to fall into the water.

The side-walls of the upland excavation area will be sloped at least 3/4 horizontal to 1 vertical unless a flatter slope is required to maintain stability of the excavation. No shoring is anticipated as part of the soil excavation work. More detailed health and safety procedures for the proposed cleanup activities are presented in the HSP and in Addendum No. 2 to the HSP (incorporated as Appendix A to this work plan).

3.3 Soil Transportation and Disposal Procedures

Once excavated, the upland soils and embankment sediments may be directly loaded into trucks for removal from the Site, or temporarily stored near the excavation area until post-excavation laboratory analysis results confirm that "hot-spot" soils and sediments have been adequately removed (see Section 4.0 below). It should be noted that excavation activities may need to be stopped and reinitiated after laboratory data are received. If temporary on-site storage is required, the soils will be placed on plastic sheeting, covered with a plastic tarp, and posted with hazardous waste warning signs.

Vehicles used for off-site transport of the hazardous wastes will be appropriately registered with DOHS and the California Department of Transportation. Truck trailers will be lined with plastic and/or absorbent materials prior to loading excavated soils and sediments. After loading, the trailers will be covered over with tarpaulins. Before leaving the Site, the wheels of the trucks will be brushed or washed down to remove dust. Trailers will be checked for proper placarding, load limits, trailer hitch connections, and lift-gate locks. All waste soils and sediments will be appropriately manifested prior to leaving the Site. The excavated soils and sediments will be transported to an approved hazardous waste facility for treatment and/or disposal.

3.4 Backfilling and Regrading

After laboratory test results confirm that upland soils and embankment sediments have been adequately removed, the excavation areas will be backfilled with clean fill, compacted, and regraded as necessary to maintain stable shoreline slopes and restore the original upland grade at the Site. Steel sheet-piling may be installed as necessary to stabilize the western edge of the upland excavation area and maintain the original grade at this part of the Site.

4. POST-EXCAVATION SAMPLING PLAN

The areal extent and depth of shoreline sediments and upland soils to be excavated will be described in the letter-report to DOHS after the pre-excavation sampling plan is completed (see Section 2.2 above). After the initially planned excavation work is completed, further sampling will be completed to confirm that the interim cleanup goal has been met. In the upland area, composite grab samples will be obtained from the walls and floors of the existing excavation and analyzed for chlorinated pesticides using EPA Method 8080. The number of composite samples analyzed from the upland excavation will depend, in part, on the original excavation area. However, a total of six composite samples from this part of the Site are currently planned for analysis.

Additional composite sampling is also planned along the embankment area. The extent of this post-cleanup sampling will depend upon the area which is excavated. A total of three composite samples from this part of the Site are currently planned for analysis, assuming that approximately a 50-foot section of the shoreline is excavated. Sampling and quality control procedures will be carried out in accordance with the Quality Assurance Project Plan for the Site.

the letter report which details the proposed excavation areas at the Site. Other meetings or telephone discussions with DOHS will be arranged on an "as-needed" basis during implementation of the removal action.

The estimated schedule for completing the interim cleanup is shown in Figure 4. The entire removal action is expected to require approximately 20 weeks to complete.

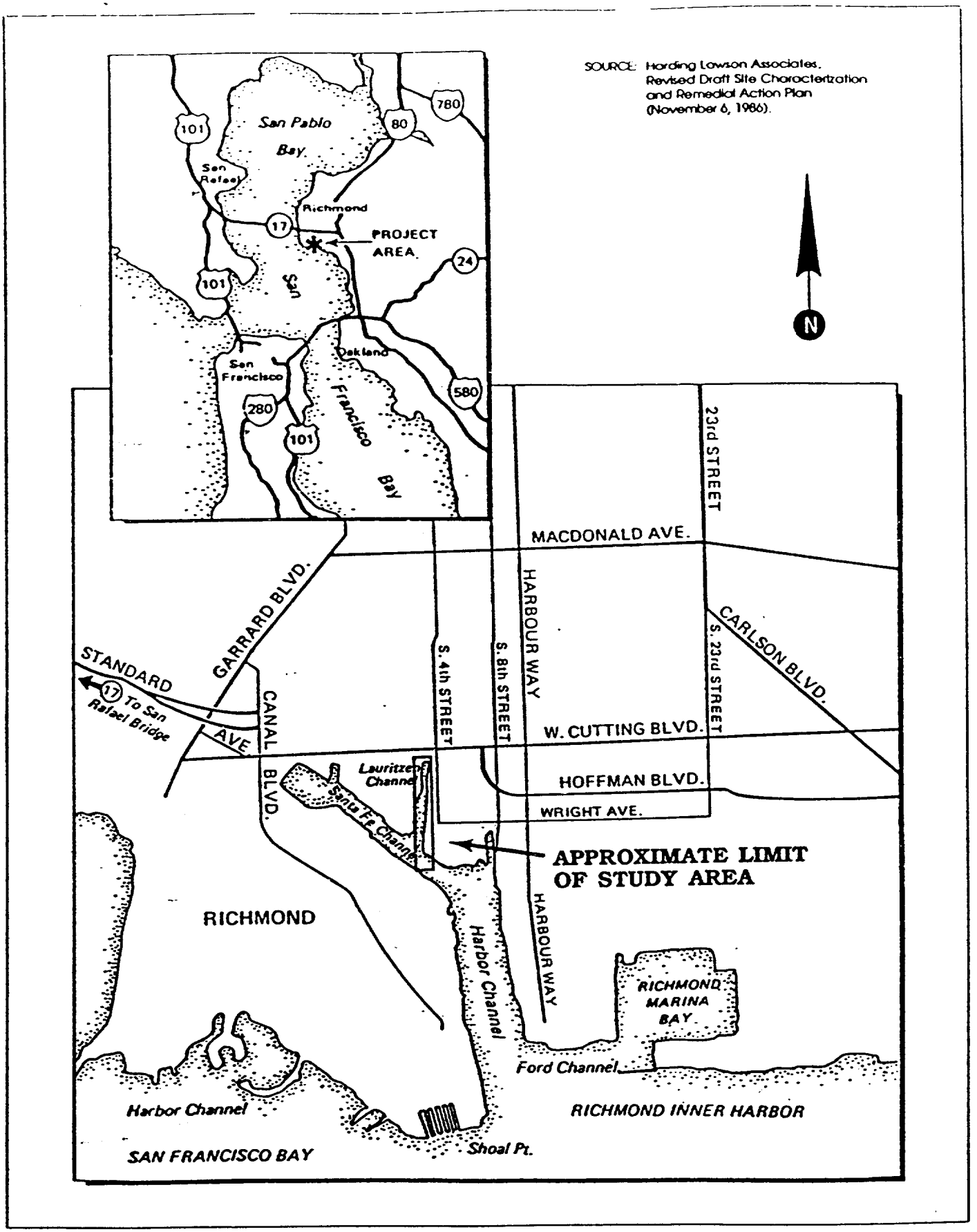

Figure 1 : SITE LOCATION MAP

Project No. 1530

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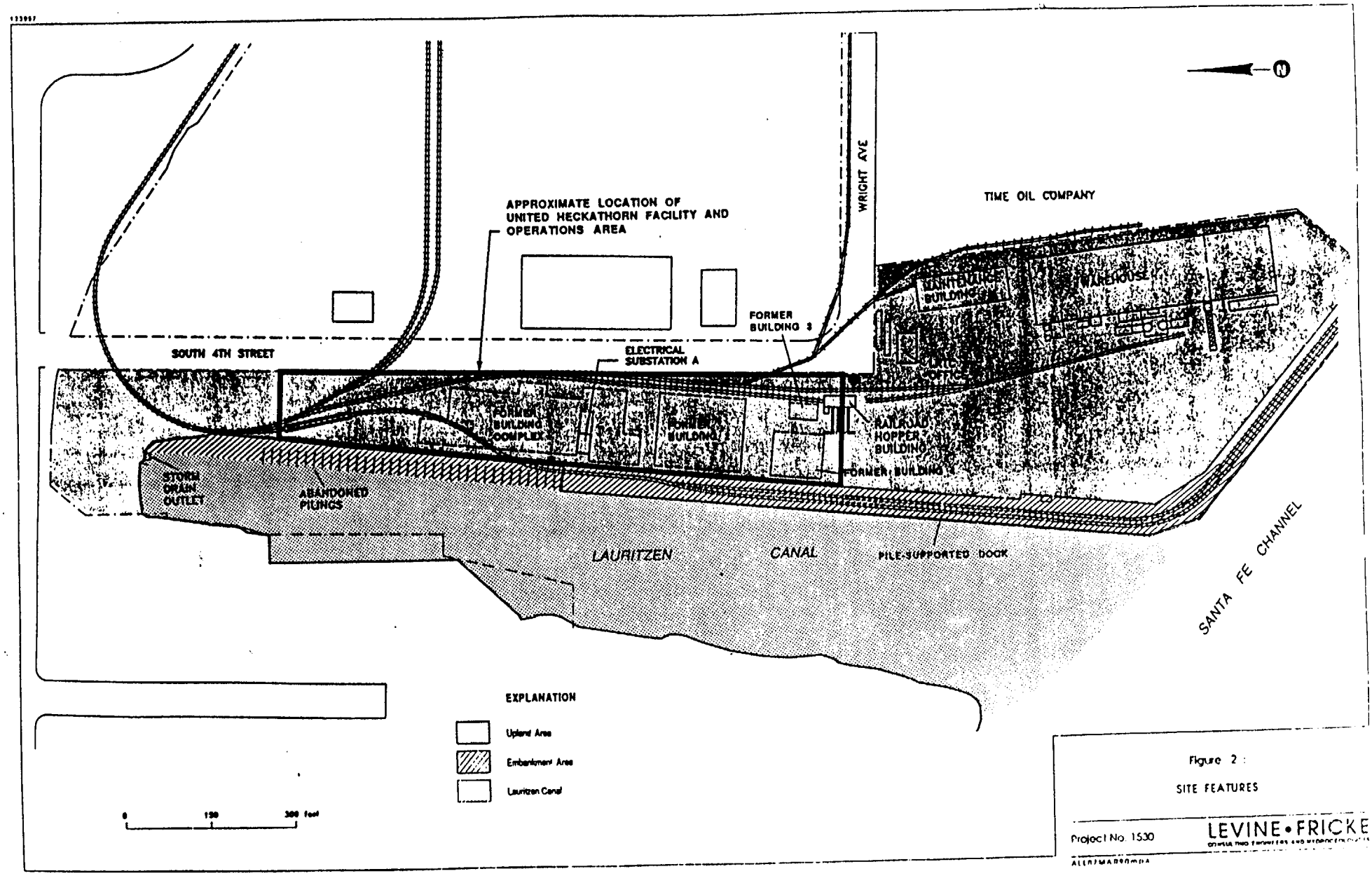

Figure 2 :

SITE FEATURES

Project No. 1530

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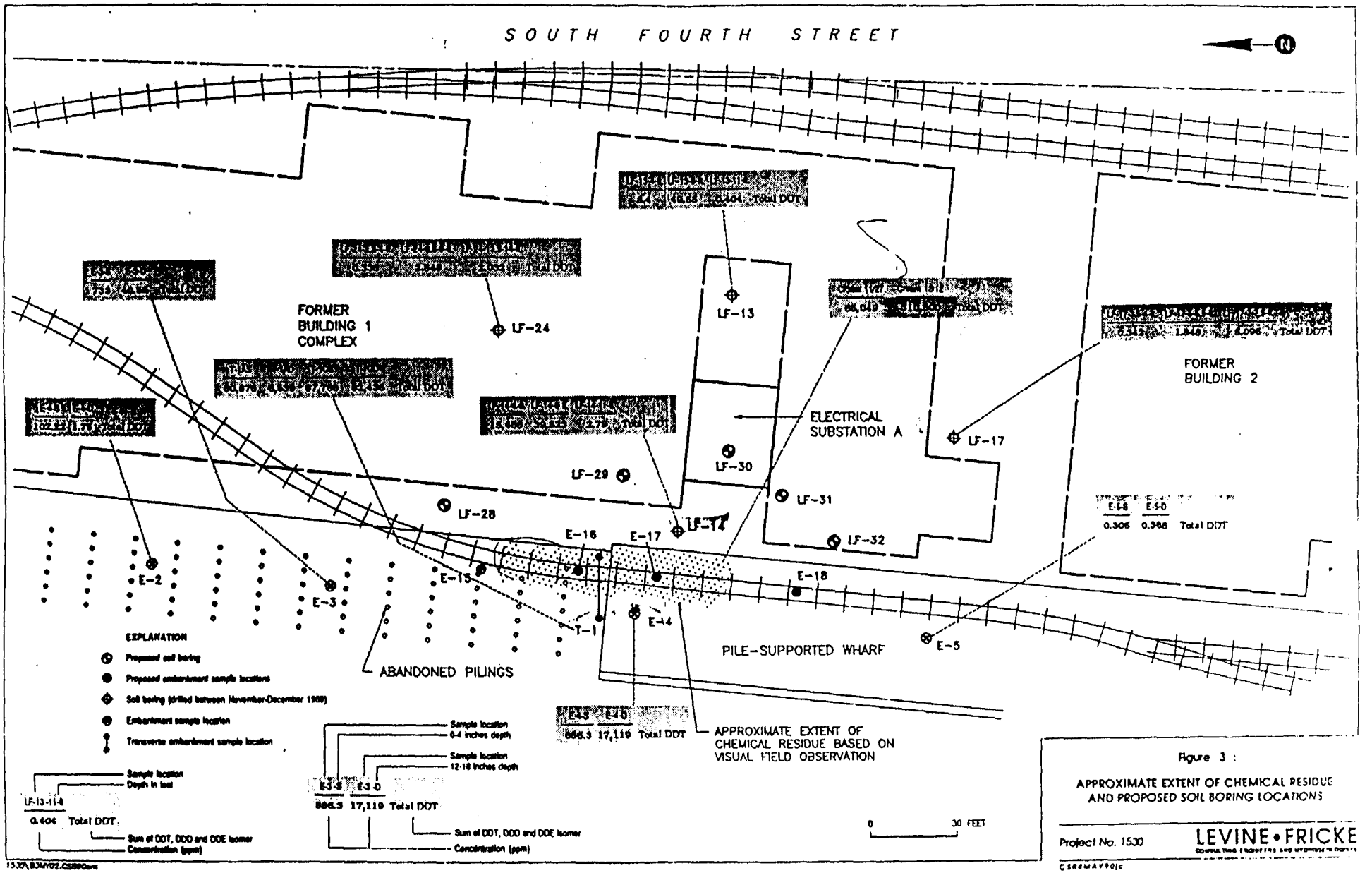

Figure 3 :

APPROXIMATE EXTENT OF CHEMICAL RESIDUE AND PROPOSED SOIL BORING LOCATIONS

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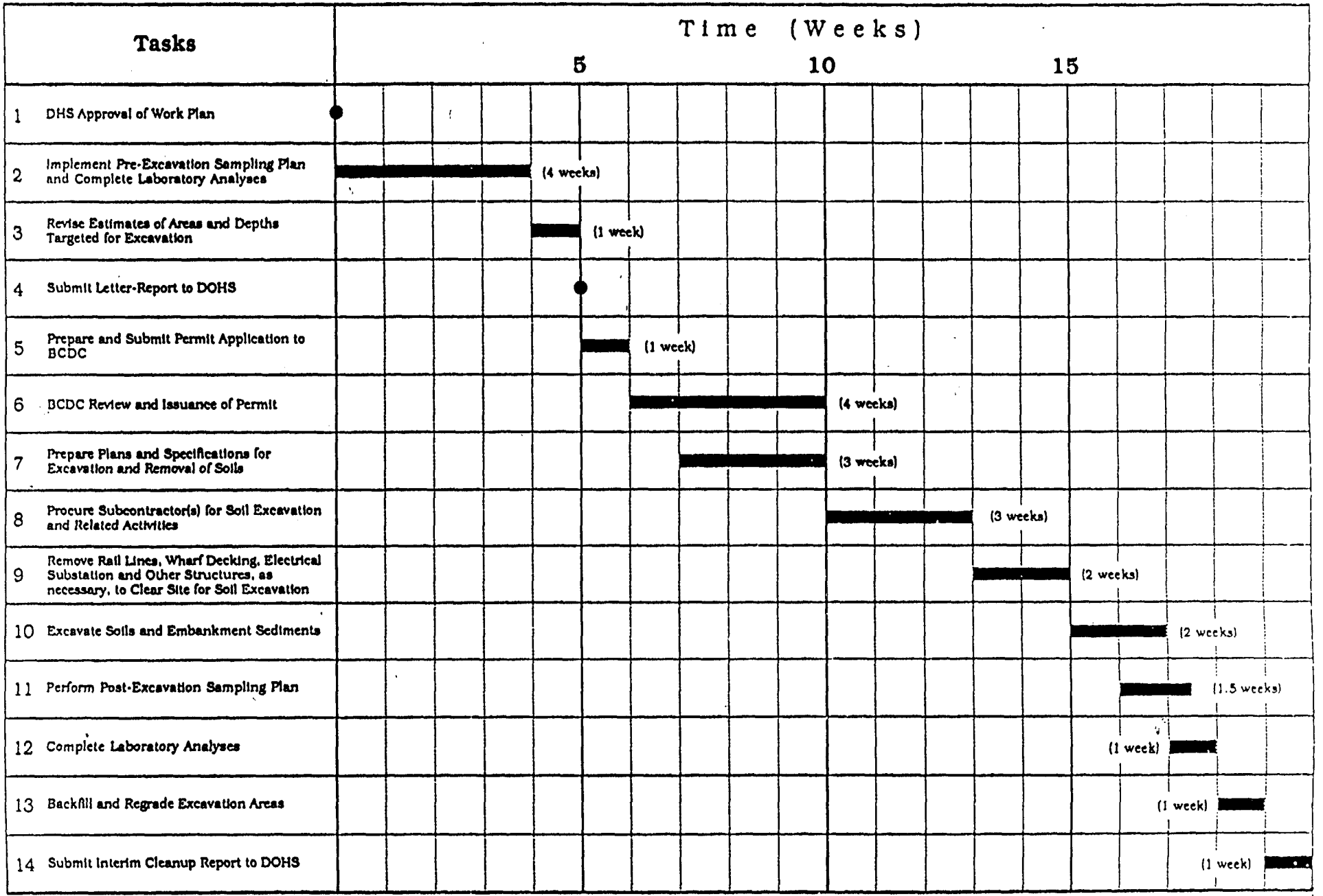
Figure 4 :
Schedule for Proposed Soil Removal Action
United Heckathorn Site, Richmond, California



NOTE: Scheduling of field work and laboratory analyses are reasonable estimates but could be delayed due to subcontractor availability, laboratory turn-around-times, inclement weather, or other factors beyond Levine•Fricke's control.

APPENDIX A:

ADDENDUM TO HEALTH AND SAFETY PLAN

May 14, 1990 LF 1530

ADDENDUM 2
TO
HEALTH AND SAFETY PLAN
(November 6, 1989)
United Heckathorn Site
Richmond, California

1.0 INTRODUCTION

Addendum 2 to the Health and Safety Plan (HSP) dated November 6, 1989 addresses the excavation and removal of upland soils and embankment sediments with the highest DDT concentrations from a localized area of the United Heckathorn Site in Richmond, California (herein after referred to as "the Site").

This HSD addendum includes the following items:

- Work Description for Excavating and Removing the Upland Soil and Embankment Sediments
- Additional Hazard Analysis
- Work Requirements (i.e., respiratory and dermal protection)
- Decontamination Requirements (equipment and personal protective equipment)
- Signatures of Levine·Fricke and Contract/Subcontract Personnel

The project HSP and Addendum 2 shall be kept on site and made available for reference during all field sampling and excavation activities.

All site personnel and visitors must read the United Heckathorn HSP and Addendum 2. In addition, prior to initiation of planned field activities, a "tailgate talk" will be held for all field personnel to discuss the contents of the USP and Addendum 2.

2.0 WORK DESCRIPTION FOR TRANSPORTING THE SOIL

Addendum 2 to the Health and Safety Plan addresses the excavation and removal of DDT-affected soils from a localized area of the Site adjacent to the Lauritzen Canal. Soils will be excavated from an upland area and along the shoreline of the Lauritzen Canal immediately downslope from the existing electrical substation. Planned activities include: (1) pre-excavation soil and embankment sediment sampling, (2) site access preparation, including removal of pile-supported rail lines and wharf, concrete rubble, riprap, and wooden pilings, (3) removal of "hot-spot" soils and sediments, (4) possible temporary on-site stockpiling of excavated soils and sediments, (5) post-excavation sampling to confirm that interim cleanup goals have been met, (6) backfilling and re-grading the excavated areas, and (7) reconstruction of the pile-supported rail lines and wharf.

3.0 CHEMICAL HAZARD ANALYSIS

Chemical hazards remain as previously stated section 5.1 of the project HSP; chemical hazards are briefly summarized below for reference purposes. (Refer to the project HSP for a complete analysis of chemical hazards.)

The primary chemical hazard associated with the soils and sediments at the Site is exposure to DDT. DDT is a colorless crystal or white, to lightly off-white, powder with a slightly aromatic odor. Short-term exposure to DDT can cause a prickly sensation of the tongue, lips and face, a general feeling of ill health, headache, fatigue, vomiting, dizziness, tremors, convulsions, partial paralysis of the hands, and coma. DDT can also irritate the eyes and skin. Skin absorption of DDT depends on its physical state and the nature of a solvent with which it may be mixed; crystalline or powdered DDT is not easily absorbed through the skin, but emulsions of DDT are absorbed to some degree. The primary exposure pathway will be through contaminated dust inhalation; however, it is not anticipated that the soil transport will generate appreciable amounts of dust because the soil will be moistened as necessary prior to movement to reduce potential dust generation.

4.0 PHYSICAL HAZARDS

The potential physical hazards associated with soil excavation and removal activities will be similar to those outlined in the project HSP, but will be mainly due to the use of heavy equipment, the presence of a high-voltage electric third rail, and the removal of the pile-supported wharf and rail structures and riprap.

5.0 WORK REQUIREMENTS

Respiratory protection and personal protective equipment requirements for excavating and removing the soil will be slightly different from the requirements outlined in the project HSP. The following personal protective equipment will be worn during the soil samplings, site access preparation and soil excavation, removal, and handling activities:

- hard hats
- steel-toed, steel-shank rubber or equivalent rubber safety boots (a second pair of identical boots will be required at the decontamination station for personnel coming into physical contact with potentially affected soils)
- safety glasses
- thin latex gloves or equivalent gloves as inner gloves and Edmont Solvex Nitrile gloves or equivalents as outer gloves
- polyethylene-coated Tyvek coveralls taped at the boots and gloves using duct tape, with the coveralls overlaying boots and gloves
- half-face air-purifying respirator (APRs) with a NIOSH-approved high efficiency particulate (HEPA)/organic vapor or pesticide or other equivalent cartridge.

Action levels remain the same as outlined in Section 6.3 of the project HSP. In particular, the On-Site Health and Safety Coordinator shall impose a temporary stop-work order and contact the Levine·Fricke Corporate Health and Safety Officer immediately if uncontrolled visible dust is generated at the Site as a result of soil transfer activities.

The work area will be defined as the excavation zones, and a 25-foot radius around these areas. The work areas will be marked prior to commencing planned field activities.

All personnel will observe Level C respiratory protection in all work areas. Standard work practices, such as minimizing dust generation, will be observed whenever possible. Where impractical, the On-Site Health and Safety Coordinator will be consulted to identify acceptable alternatives. Personal protective gear indicated above will be worn by all Levine·Fricke personnel, as well as the Levine·Fricke subcontractors involved in soil sampling, site access preparation, and soil excavation and removal.

Exclusion Zones

Formal exclusion zones will be required for soil handling activities. Unauthorized personnel will not be permitted near work areas. The work areas will be demarcated.

Decontamination Zone

A formal decontamination zone will be located a minimum of 25 feet from the work area. Decontamination procedures are described in Section 6 of this addendum.

Support Zones

No formal requirements will be necessary for support zones. Support areas will be located at a minimum of 50 feet from all work areas.

6.0 Decontamination Procedures

Personnel

Decontamination will be required prior to leaving the Site and each sample target area. An eight-station decontamination zone will be located at least 25 feet from the work zone. The eight stations will be:

Station 1. Coverall, boot and outer glove wash (Alconox or TSP)
Station 2. Coverall, boot and outer glove rinse (water)
Station 3. Coverall, boot and outer glove wash (isopropyl alcohol)
Station 4. Coverall, boot and outer glove rinse (water)
Station 5. Outer glove removal
Station 6. Suit removal
Station 7. Boot removal for personnel coming into direct contact with potentially affected soils, followed by inner glove removal and replacement of boots with second pair of safety boots (personnel not coming into direct contact with DDT-affected soils will need to remove inner gloves only)
Station 8. APR removal and washing in Alconox or TSP and isopropyl alcohol

Each person will be required to wash his/her hands and face prior to leaving the Site at the end of the work day and prior to taking breaks, such as lunch. It is recommended that a shower be taken at the end of the work day upon reaching one's residence prior to the next meal. All disposable protective equipment

shall be left on site and bagged and placed into appropriate containers for temporary storage. All boots will be washed with Alconox or TSP, rinsed, washed with isopropyl alcohol and rinsed prior to removal from the Site.

The following minimum decontamination equipment will be present at the decontamination area:

- Four tubs for coverall, boot, and glove wash and rinse
- Plastic sheet for ground cover under the decontamination zone
- Alconox or TSP and isopropyl alcohol
- Four brushes with handles for boot wash and rinse
- Plastic garbage bags for disposal of used protective clothing

Equipment

Equipment that comes in contact with soils as part of the soil excavation and removal activities described herein will be steam-cleaned or washed with Alconox detergent and isopropyl alcohol, and rinsed with fresh water prior to movement from the work area. Truck wheels will be brushed off or washed prior to leaving the site.

7.0 TRAINING PROGRAM

- The Levine-Fricke On-Site Health and Safety Coordinator shall have fulfilled all appropriate training requirements indicated by 29 CFR 1910.120 (e), including the 40-hour training requirement and required refresher courses.

- A tailgate session will be held prior to commencing field activities to discuss the project HSP and Addendum 2.

8.0 SIGNATURES

8.1 Approvals by Levine·Fricke Personnel

The following Levine·Fricke personnel have read and approved Addendum 2 to the project HSP for the United Heckathorn Site in Richmond, California.

Norman T. Ozaki, Ph.D. — Date: 5-14-90
Corporate Health and Safety Officer

Mark D. Knox FOR — Date: 5-14-90
James D. Levine, P.E.
President and Corporate Officer

8.2 Acknowledgments by Levine·Fricke Personnel

The following Levine·Fricke personnel have read and understood Addendum 2 to the project HSP for the United Heckathorn Site in Richmond, California.

Alan L. Leavitt — Date: 5-14-90
Project Coordinator

Craig S. Benson — Date: 5/14/90
Project Geologist
On-Site Health and Safety Coordinator

8.3 Contractor and Subcontractor Personnel:

Contractor and Subcontractor Agreements:

1. Contractor certifies that he has received a copy of this Addendum 2 and will insure that the employees and subcontractors of the Contractor are informed, and will comply with both OSHA requirements and the guidelines in this Addendum 2 and the project HSP.

2. Contractor further certifies that he has read, understands, and will comply with all provisions of this Addendum 1 and the project HSP and will not hold Levine·Fricke responsible or liable for any injury or health problems that may occur.

Contractor Personnel	Training/ Certification/ Medical Examination	Signature	Date
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____